

CORRESPONDENCE

Letters to the Editor

Evidence-Based Medicine and Clinical Judgment: An Imaginary Divide

The study by Pereira et al. (1) and the accompanying commentary by Ben-Yehuda (2) once again bring to the fore some often-raised arguments against evidence-based medicine. Detractors of evidence-based medicine tend to imbue “clinical judgment” with an aura, which barely falls short of the divine, by attributing intangible powers to clinicians. This view of clinical judgment is more about the clinician than about judgment. In reality, individuals, clinicians, or otherwise, are swayed more by anecdotal experience (3); as a result, they are more prone to systematic errors while making judgments under situations of uncertainty (4). Evidence from clinical trials, if anything, adds objectivity, reduces bias, and refines a clinician’s ability to make decisions.

In the study by Pereira et al. (1), the participating clinicians were not in agreement with the random allocation in more than half the patients. As pointed out by the investigators, the different prevalence of 3-vessel disease and the complexity of lesions were primarily responsible for this situation. Stated simply, the clinicians were (justifiably) reluctant to send patients with complex lesions and 3-vessel disease for angioplasty, because they were aware of the data that these patients would not have the best results with angioplasty. Numbers permitting, subgroup analysis of the trial would probably bear out these clinicians’ concerns. Therefore, what has been somewhat mystically termed “clinical judgment” is nothing but the correct interpretation of available data by discerning cardiologists.

It is important for the scientific community to recognize that there is in fact no real disconnect between evidence-based medicine and an individual clinician’s judgment. Gone are the days when a few towering experts drew on personal experience to make clinical decisions. Good clinical judgment in the present day has evolved into the clinician’s ability to appropriately interpret and incorporate available evidence in the day-to-day management of patients. Of course, some clinicians will be better at this than others!

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Reply

We appreciate Dr. Karthikeyan’s interest in our study on the predictive power of clinical judgment in chronic coronary artery disease (1). We agree with his opinion that there is in fact no real disconnect between evidence-based medicine and an individual clinician’s judgment and that evidence from clinical trials helps add objectivity, reduces bias, and refines a clinician’s ability to make decisions.

Clinical judgment, far from a mystical definition, is the result of a complex equation that takes into account objective data from biochemical tests, imaging studies, and a patient’s history. It also uses subjective information acquired by the physician over the course of the patient–physician relationship.

We disagree, however, with the view that the different prevalence of 3-vessel disease and the complexity of lesions were primarily responsible for the nonconcordance between a clinician’s treatment option and the randomization process. Furthermore, unlike what Dr. Karthikeyan affirmed, this has not been pointed out in our report. In fact, a careful examination of Table 3 from our study (1) would allow the observation that lesion morphology distribution in patients treated by percutaneous coronary intervention (PCI) was not significantly different between concordant and discordant groups, and even the concordant group treated by PCI had an almost 50% prevalence of patients with 3-vessel disease. Angiographic findings were certainly used in the decision process. However, it should be emphasized that the angiographic variables that were investigated explained a very small percentage of our model’s overall variance. This means that clinical judgment either uses other variables not investigated in our study or it is capable of deriving information from higher-order interactions using the variables available from imaging examinations (i.e., angiographic findings) and cardiovascular risk factors that a patient may present. In fact, it probably uses both and has the capability of integrating all this information into a single decision.

No simple statements can be easily made regarding what clinical, demographic, angiographic, or biochemical variables are being used (or in what way) by clinicians to make their decision in this particular scenario. An increased number of patients could potentially permit statistical power for exploratory subgroup and

higher-order interaction analysis in the aim of disclosing this important issue.

During the last several years the cardiology community has been highly influenced by medical guidelines, randomized clinical trials, and “cost-effective” algorithms. All these tools are invaluable for practicing medicine and in helping the decision-making process. Nevertheless, we should not forget that a physician’s judgment is what processes and consolidates all this information. Apparently, in this particular clinical scenario it can still make a difference.

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Reply

Dr. Karthikeyan, in an impassioned response to the study by Pereira et al. (1) and my accompanying editorial (2), which highlighted the role of clinical judgment, states that detractors of evidence-based medicine “imbue ‘clinical judgment’ with an aura, which barely falls short of the divine.” The message in the editorial, as well as in the original report, was not intended to either “detract” from the appropriate role of evidence-based medicine garnered through sound scientific research or to claim any magical powers for clinical judgment. Rather, the main point, supported by the findings of the study by Pereira et al. (1), is that the complexity of the clinical decision process as well as the uniqueness of each individual patient may not always be adequately captured in our evidenced-based criteria.

Dr. Karthikeyan rightly points out that some of the reasons the physicians chose one treatment over the other were objective findings on the angiogram. Yet these physicians were better able to risk-stratify the patients despite the a priori “equivalence” of the findings based on the entry criteria of the trial.

No amount of clinical trial data can ever capture the almost infinite variables involved in the complex biology of health and disease. In addition, the somewhat arbitrary cutoffs employed in data analysis add additional limitations. Take as an example the findings from the SHOCK (SHould we revascularize Occluded Coronaries for cardiogenic shock) trial (3) that patients over the age of 75 did not benefit from revascularization. Taken to its absurd limit, would the thoughtful clinician withhold revascularization from the robust patient who is 76 years old and, conversely, prescribe it for the frail 74-year-old with co-morbidities?

Few would argue with the statement that evidence-based medicine has improved clinical care. We should be careful, however, to borrow from Dr. Karthikeyan’s own terminology, from ascribing “divine” powers to evidence-based medicine and guidelines. The limitations of our knowledge base must be acknowledged, as is the contribution of physician experience and judgment, particularly in individual patients. We should also use scientific methods, as admirably done by Pereira et al. (1), to evaluate evidence-based medicine itself, and to help improve our clinical decision-making process.

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